

Rec'd PCT/PTO 08 MAR 2005

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10/526939

REC'D 28 DEC 2004

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INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference B02/05 BPC jw	FOR FURTHER ACTION		See Form PCT/PEA/416
International application No. PCT/E 3/10287	International filing date (day/month/year) 16.09.2003	Priority date (day/month/year) 17.09.2002	
International Patent Classification (IPC) or national classification and IPC B01J29/89			
Applicant BASF AKTIENGESELLSCHAFT et al.			
<p>1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.</p> <p>2. This REPORT consists of a total of 5 sheets, including this cover sheet.</p> <p>3. This report is also accompanied by ANNEXES, comprising:</p> <p>a. <input checked="" type="checkbox"/> sent to the applicant and to the International Bureau) a total of 3 sheets, as follows:</p> <p><input type="checkbox"/> sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).</p> <p><input checked="" type="checkbox"/> sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in Item 4 of Box No. I and the Supplemental Box.</p> <p>b. <input type="checkbox"/> (sent to the International Bureau only) a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).</p>			
<p>4. This report contains indications relating to the following items:</p> <p><input checked="" type="checkbox"/> Box No. I Basis of the opinion</p> <p><input type="checkbox"/> Box No. II Priority</p> <p><input type="checkbox"/> Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability</p> <p><input type="checkbox"/> Box No. IV Lack of unity of invention</p> <p><input checked="" type="checkbox"/> Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement</p> <p><input type="checkbox"/> Box No. VI Certain documents cited</p> <p><input type="checkbox"/> Box No. VII Certain defects in the international application</p> <p><input type="checkbox"/> Box No. VIII Certain observations on the international application</p>			
Date of submission of the demand 13.02.2004		Date of completion of this report 28.12.2004	
Name and mailing address of the international preliminary examining authority:  European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016		Authorized Officer Schoofs, B Telephone No. +31 70 340-2760	



**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP 03/10287

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.
- ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
- ☐ international search (under Rules 12.3 and 23.1(b))
 - ☐ publication of the international application (under Rule 12.4)
 - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)
2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

14-24 as originally filed

Claims, Numbers

1-13 received on 06.08.2004 with letter of 05.08.2004

Drawings, Sheets

1/1 as originally filed

- ☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing
3. ☐ The amendments have resulted in the cancellation of:
- ☐ the description, pages
 - ☐ the claims, Nos.
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):
4. ☒ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
- ☐ the description, pages
 - ☒ the claims, Nos. 1-13
 - ☐ the drawings, sheets/figs
 - ☐ the sequence listing (*specify*):
 - ☐ any table(s) related to sequence listing (*specify*):

* If item 4 applies, some or all of these sheets may be marked "superseded."

**INTERNATIONAL PRELIMINARY REPORT
ON PATENTABILITY**

International application No.
PCT/EP 03/10287

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes: Claims	
	No: Claims	1-5,15-17,19
Inventive step (IS)	Yes: Claims	
	No: Claims	6-14,18
Industrial applicability (IA)	Yes: Claims	1-19
	No: Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item I

Basis of the report

1. The amended set of claims 1-13 as filed on 06.08.2004 introduces subject-matter which extends beyond the content of the application as filed, contrary to Article 34(2)(b) PCT.
- 1.1 The amendment concerned is new independent claim 1. Although each of the individual process steps (I), (II), (S), (C) and (W) is as such supported by the application as filed, there is no disclosure in the application as filed to carry out these steps in the particular sequence as indicated in present claim 1. More specifically, the passages on p. 2, l. 20-24, p. 20, l. 10-26, p. 21, l. 5-14 and claim 1 as filed provide various options for carrying out the particular process steps before or after other process steps, while several process step are indicated as optional. However, there is no disclosure in the application as filed to select particular optional process step to be present or not and to combine these process step in the particular sequence as indicated in present claim 1.
- 1.2 Since new claim 1 is not admissible, the report is established as if this amendment had not been made. Basis for the report are therefore claims 1 to 19 as originally filed.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Reference is made to the following documents:
 - D1: WO 94 02245 A (BUSKENS PHILIP LUC ;HUYBRECHTS DIANE RENATA CORNEL (BE); MARTENS L) 3 February 1994 (1994-02-03)
 - D2: US-A-5 412 122 (SAXTON ROBERT J ET AL) 2 May 1995 (1995-05-02)
 - D3: WO 03 042101 A (PQ HOLDING INC) 22 May 2003 (2003-05-22)

2. D1 discloses a process for the preparation of a titanium containing zeolite beta catalyst for the oxidation of organic compounds using organic hydroperoxides such as the epoxidation of olefins, in which the catalyst is post treated with an inorganic acid, an inorganic base or steam after separating the zeolite from the mother liquor and prior to calcination (D1, claims 1 and 5-9; page 4, lines 24-32; page 6, lines 19-20 and examples in particular "treatments^a" in tables 2 and 3). The subject-matter of claims 1-5, 15-16 and 19 is therefore not new (Article 33(2) PCT).
 - 2.1 If the present treatment with water results in an increased UV/VIS absorption in the 250 to 350 nm region, then also the treatment with water according to D1 will result in an increased UV/VIS absorption in the 250 to 350 nm region. The subject-matter of claim 17 is therefore not new (Article 33(2) PCT).
 - 2.2 Dependent claim 6 merely defines the location where the treatment with water is performed. Hence, claim 6 does not contain any feature which is associated with a technical effect that could support the presence of an inventive step (Article 33(3) PCT).
 - 2.3 If any of claims 7-14 or 18 would already differ from D1 in that the solid material is agglomerated or granulated (see claim 7) or shaped into a shaped body (see claims 10 and 18), it appears that such a feature is not associated with a technical effect that could support the presence of an inventive step. Hence, no inventive step is present in the subject-matter of claims 7-14 and 18 (Article 33(3) PCT).
3. Similarly, D2 discloses the treatment of titanium-containing molecular sieve catalysts with 1M aqueous sodium acetate at 80°C for four hours (D2, example 1) or treatment with a 1M solution of ammonium nitrate at 80°C for four hours (D2, example 2).
 - 3.1 Hence, the subject-matter of claims 1-19 is not new (Article 33(2) PCT) or not associated with any technical effect that could support the presence of an inventive step (Article 33(3) PCT).

additional comment
4. Upon entry into the European phase, document D3 will be taken into consideration.

We claim

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1. A process for providing a catalytic material in the form of a shaped body, the process comprising the steps of

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- producing a solid material containing at least one zeolite and being at least partly crystalline, comprising at least the following steps:

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- (I) at least partial crystallization of at least one solid material containing at least one zeolite out of a synthesis mixture, resulting in mixture (I) containing at least said solid material and a mother liquor;

- (II) separating and/or concentrating of the solid material in mixture (I);

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- shaping the solid material into a shaped body containing at least one zeolite and being at least partly crystalline in a step (S) and calcining the shaped body in a step (C);

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wherein separating and/or concentrating in (II) is carried out by a method selected from the group consisting of filtration, ultrafiltration, diafiltration, centrifuge methods, spray drying and spray granulating, and

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wherein the shaping of the solid material in step (S) is selected from the group consisting of pelleting, pressing, extruding, sintering, roasting and briquetting.

2. The process according to claim 1 wherein the composition containing water is water in its liquid phase.

3. The process according to any one of the preceding claims, wherein the step (C) is carried out at approximately 400°C to approximately 800°C for approximately 3 h to approximately 10 h.
- 5 4. The process according to any one of the preceding claims, wherein the solid material is dried prior to step (S).
- 10 5. The process according to any one of the preceding claims, wherein in (W) a mixture of the calcined shaped body with the composition containing water is formed in a stirring tank.
6. The process according to claim 5, wherein the mixture is stirred in the stirring tank for 12 to 24 h.
- 15 7. The process according to any one of the preceding claims, characterized in that the at least one zeolite contains Ti.
- 20 8. The process according to claim 7, characterized in that the at least one zeolite containing Ti is selected from materials of the structure classes MFI, MEL, MWW, BEA or any mixed structures thereof.
- 25 9. The process according to any one of the preceding claims, characterized in that the step (W) is carried out in the reactor where the chemical reaction is carried out in which the catalytic material is used as catalyst.
- 30 10. The process according to any one of the preceding claims wherein the step (S) is carried out in extruders resulting in extrudates of a diameter ranging from 1 to 10 mm.
11. Catalytic material obtainable by a process according to any one of claims 1 to 10.

12. Catalytic material according to claim 11, characterized in that the solid material displays an increased UV/VIS absorption over solid materials that have not been brought in contact with a composition containing water, in the region from 250 to 350 nm.

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13. Use of the catalytic material according to claim 11 or 12 as a catalyst or a co-catalyst in the reaction of at least one compound with at least one C-C-double bond with at least one hydroperoxide.